

WHAT IS CLAIMED IS:

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1. A method for cross-fading audio streams, said method comprising the steps of:

5 receiving first audio data from a first audio stream;
receiving second audio data from a second audio stream,
normalizing in sampling rate a portion of said first audio data which overlaps in time with said second audio data to generate first samples;
normalizing in sampling rate a portion of said second audio data which overlaps in time with said first audio data to generate second samples; and
10 cross-fading pairs of samples, each pair substantially corresponding to a playback time, one sample of each pair from said first samples, the other sample of each pair from said second samples.

2. The method as defined in Claim 1, wherein said cross-fading includes applying a first cross-fade weight to a first sample of each of said pair of samples to obtain a first contribution, applying a second cross-fade weight to a second sample of each of said pair of samples to obtain a second contribution, and combining said first and second contributions to generate a cross-fade sample.

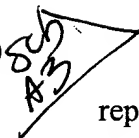
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3. A method for cross-fading between first and second received audio streams representing the same original audio signal, the method comprising the steps of:

20 receiving in a receive buffer first audio data representing a time period t_1 of said original audio signal, said first audio data from said first audio stream;
decoding said first audio data to generate first audio samples;
resampling said first audio samples in accordance with a target sampling rate to generate first resampled audio samples;
25 receiving in said receive buffer second audio data representing a time period t_2 of said original audio signal, said second audio data from said second audio stream, said time period t_2 overlapping in a time period t_3 said time period t_1 ;
decoding said second audio data to generate second audio samples;

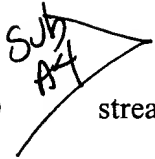
resampling said second audio samples in accordance with said target sampling rate to generate second resampled audio samples, each of said second resampled audio samples substantially corresponding in time to a respective one of said first resampled audio samples to form a sample pair; and

5 cross-fading each sample pair corresponding to a time within said time period t_3 , by applying a first cross-fade weight to a first sample of said sample pair to obtain a first contribution, by applying a second cross-fade weight to a second sample of said sample pair to obtain a second contribution, and by combining said first and second contributions.

10  4. The method as described in Claim 3, wherein said first audio stream represents said original audio signal at a first sampling rate and said second audio stream represents said original audio signal at a second sampling rate.

15 5. The method as described in Claim 4, wherein each applied first cross-fade weight represents a value between 1 and 0, and the sum of said first cross-fade weight and said second cross-fade weight applied to each said sample pair is 1.

6. The method as described in Claim 5, wherein each applied first cross-fade weight represents a point along a curve defined by one-half cycle of the cosine function offset and scaled to begin at a value of one and end at a value of zero.

20  7. A system for cross-fading between first and second received audio streams representing an original audio signal, said system comprising:

a receive buffer storing received audio stream data;
a decoder decoding audio stream data from said receive buffer into digital samples;

25 a sample-rate converter resampling said digital samples in accordance with a target sampling rate; and

a cross-fader responsive to a cross-fade signal to cross-fade first resampled digital samples from said first audio stream with resampled digital samples from said second audio stream overlapping in time with said first digital samples.

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8. The system as described in Claim 7, wherein said cross-fader applies cross-fade weights to paired resampled samples from said first and second audio streams to generate cross-faded samples, each of said pairs of resampled samples substantially corresponding to a playback time.

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9. The system as described in Claim 8, wherein said cross-fader applies a first cross-fade weight to a first of each pair of said resampled samples and applies a second cross-fade weight to a second of each pair of said resampled samples, said first and second cross-fade weights summing to one.

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10. A system for cross-fading audio data, the system comprising:
means for receiving transmitted audio data;
means for decoding audio data from two different audio streams;
means for resampling audio data from two different audio streams to a common sampling rate, the audio streams encoded at different sampling rates;
and
means for cross-fading resampled audio data from first and second portions two different audio streams, said audio data overlapping in time, said two different audio streams representing the same original audio signal.

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